

CLAIMS

Claim 1. A method for modifying the hydraulic circuitry of a "factory installed" automotive transmission of the type including at least two fluid flow passageways disposed in fluid communication between a "factory installed" manual valve and a "factory installed" manual timing valve, said manual timing valve being disposed in fluid communication between said at least two fluid flow passageways and a "factory installed" low and reverse modulator valve such that fluid pressure from both of said two fluid flow passageways is simultaneously applied to said low and reverse modulator valve through said manual timing valve;

the steps of said method comprising:

modifying said "factory installed" manual timing valve such that fluid pressure is applied to said modified manual timing valve simultaneously from both of said two fluid flow passageways to move said manual timing valve until a predetermined pressure is applied thereto, and thereafter causing said manual timing valve to block fluid flow through one of said two fluid flow passageways so that fluid pressure is applied to said low and reverse modulator valve through said manual timing valve only through the other of said two fluid flow passageways.

Claim 2. The method as claimed in Claim 1 wherein the step of modifying the "factory installed" manual timing valve includes

the step of replacing the "factory installed" manual timing valve with a manual timing valve defining a land which blocks fluid flow from said one of two fluid flow passageways as a result of said movement of said manual timing valve when said predetermined pressure is applied thereto.

Claim 3. The method as claimed in Claim 1, further comprising the step of reducing the diameter of one of said two fluid flow passageways disposed in fluid communication between said manual valve and said manual timing valve for reducing the rate of fluid flow through said one fluid flow passageway.

Claim 4. The method as claimed in Claim 2, further comprising the step of reducing the diameter of said other of said fluid flow passageways to reduce the rate of fluid flow through said other of said fluid flow passageways.

Claim 5. The method as claimed in Claim 4, further comprising the step of reducing the rate at which fluid pressure is applied to said low and reverse modulator valve through said manual timing valve as a result of the reduced rate of fluid flow through said other of said fluid flow passageways.

Claim 6. The method as claimed in Claim 1, wherein said predetermined pressure does not exceed 48 pounds per square inch.

Claim 7. The method as claimed in Claim 1, wherein said "factory installed" automotive transmission is a 4R100.

Claim 8. The method as claimed in Claim 1, wherein said "factory installed" transmission is an E4OD.

Claim 9. The method as claimed in Claim 3, wherein the reduced diameter of said one fluid flow passageway does not exceed 0.56 inches.

Claim 10. The method as claimed in Claim 4, wherein the reduced diameter of said other fluid flow passageway does not exceed 0.56 inches.

Claim 11. The method as claimed in Claim 1, wherein said "factory installed" transmission includes an accumulator piston disposed on one side of said manual timing valve,

the steps of said method comprising moving the accumulator piston in a first predetermined direction relative to the said manual timing valve by fluid pressure applied to said manual timing valve through said other of said two fluid flow passageways after said predetermined pressure has been applied to said manual timing valve.

Claim 12. The method as claimed in Claim 11, further comprising the step of applying a resilient force to said

accumulator piston to oppose movement of said accumulator piston in said first predetermined direction.

Claim 13. The method as claimed in Claim 11, further comprising the step of providing a fluid flow passageway in fluid communication with said accumulator piston, said fluid flow passageway arranged to apply a fluid pressure to said accumulator piston to oppose movement of said accumulator piston in said first predetermined direction.

Claim 14. The method as claimed in Claim 11, further comprising the steps of:

applying a resilient force to said accumulator piston to oppose movement of said accumulator piston in said first predetermined direction; and

providing a fluid flow passageway in fluid communication with said accumulator piston, said fluid flow passageway arranged to apply a fluid pressure to said accumulator piston to oppose movement of said accumulator piston in said first predetermined direction.

Claim 15. The method as claimed in Claim 1, wherein said "factory installed" automotive transmission includes a boost valve operatively associated with said low and reverse modulator valve for regulating low and reverse clutch pressure,

said method further comprising the step of increasing the diameter of the boost valve for increasing the pressure applied to the low and reverse clutch.

Claim 16. The method as claimed in Claim 15, wherein the step of increasing the diameter of said boost valve includes the step of increasing said diameter of said boost valve to a size sufficient to apply a pressure of at least 80 pounds per square inch to the low and reverse clutch.

Claim 17. A method for modifying the hydraulic circuitry of a "factory installed" automotive transmission of the type including at least two fluid flow passageways disposed in fluid communication between a "factory installed" manual valve and a "factory installed" manual timing valve, said manual timing valve being disposed in fluid communication between said at least two fluid passageways and a "factory installed" low and reverse modulator valve such that fluid pressure from both of said two fluid flow passageways is simultaneously applied to said low and reverse modulator valve through said manual timing valve, said "factory installed" automotive transmission further including a boost valve operatively associated with said low and reverse modulator valve for regulating low and reverse clutch pressure;

the steps of said method comprising:

modifying said "factory installed" manual timing valve such that fluid pressure is applied to said modified manual timing valve simultaneously from both of said two fluid flow passageways to move said manual timing valve until a predetermined pressure is applied thereto, and thereafter causing said manual timing valve to block fluid flow through one of said two fluid flow passageways so that fluid pressure is applied to said low and reverse modulator valve through said manual timing valve only through the other of said two fluid flow passageways;

reducing the diameter of one of said two fluid flow passageways disposed in fluid communication between said manual valve and said manual timing valve for reducing the rate of fluid flow through said one fluid flow passageways; and

increasing the diameter of the boost valve for increasing the pressure applied to the low and reverse clutch.

Claim 18. A method for modifying the hydraulic circuitry of a "factory installed" automotive transmission of the type including a pressure regulator valve in fluid communication with the outlet of a pump for moving said pressure regulator valve in a first predetermined direction, said pressure regulator valve operatively associated with two circuits such that said two circuits are coupled together in fluid flow relationship when a predetermined pressure is applied to said pressure regulator

valve to move said pressure regulator valve a predetermined distance;

    said method comprising the step of decreasing the value of said predetermined pressure applied to said pressure regulator valve necessary to move said pressure regulator valve said predetermined distance for coupling said two circuits in fluid flow relationship.

    Claim 19. The method as claimed in Claim 18, wherein the step of decreasing the value of said predetermined pressure includes the step of providing a seat for engaging the pressure regulator valve for controlling the distance moved by said pressure regulator valve for coupling said two circuits in fluid flow relationship.

    Claim 20. The method as claimed in Claim 19, further including the step of applying a resilient force to said pressure regulator valve through said seat for adjusting the predetermined pressure applied to said pressure regulator valve necessary to move said pressure regulator valve said predetermined distance for coupling said two circuits in fluid flow relationship.